The DRILLER

In typical "iron rock" country, C. S. Garber of Locust Grove, Pennsylvania uses his Bucyrus-Erie 22-W to put in a 10-inch residential well.

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VOLUME 19 JULY, 1945 NUMBER 7

THE DRILLER U. S. POSTAGE

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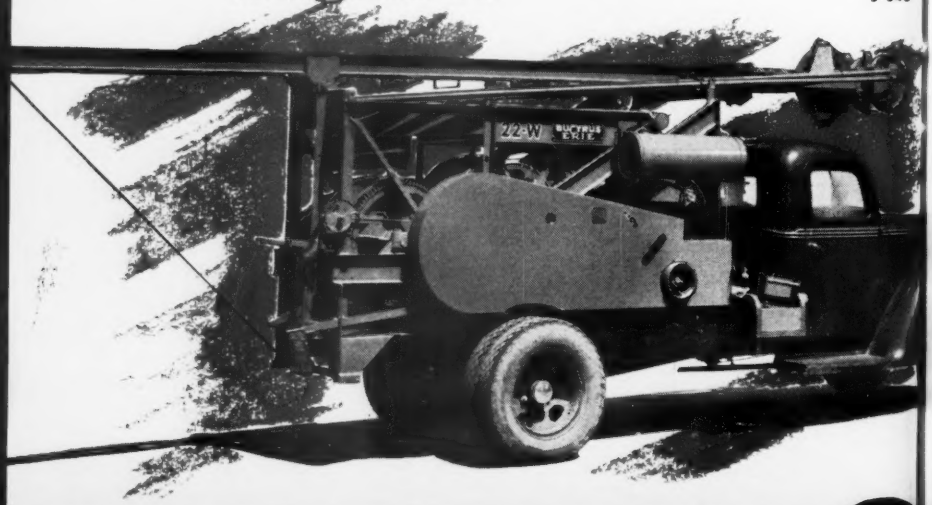

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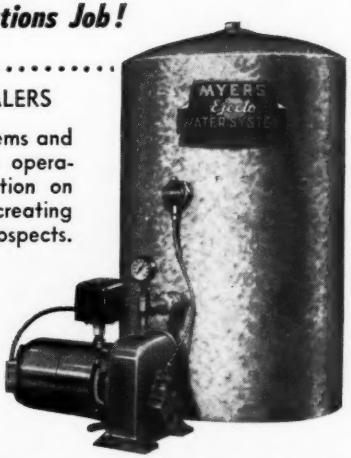

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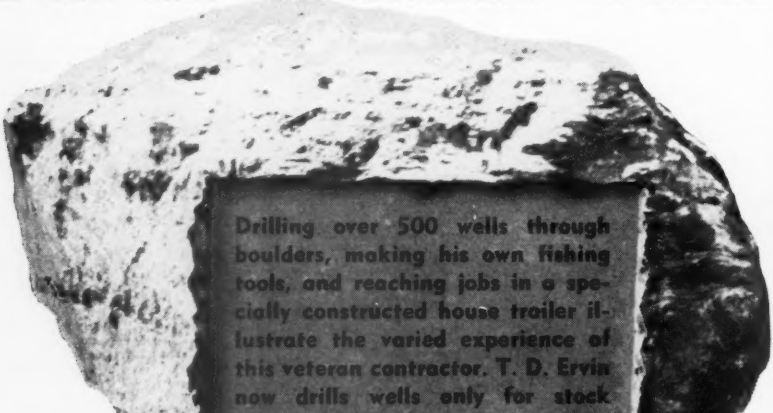
INGENUITY
Helps Colorado Driller Put in Unusual Wells


Drilling over 500 wells through boulders, making his own fishing tools, and reaching jobs in a specially constructed house trailer illustrate the varied experience of this veteran contractor. T. D. Ervin now drills wells only for stock farms and ranches.

BECAUSE the opportunity presents itself very seldom, T. D. Ervin of Glenwood Springs, Colorado, still remembers the pleasant sensation he had looking *up* through a drill hole rather than down the usual way.

The hole was one of several put in for a Colorado coal mine which needed a method to run its power lines and sprinkling system to the main drift. After the hole was drilled, Ervin rather breathlessly traveled down the shaft to the main drift and looked up to see daylight peeping through the freshly drilled job.

Ervin also likes to recall the time he had to maneuver his truck rather trickily to reach the spot that produced his best well. To set up for the job near Craig, T. D. was forced to back his rig more than 500 feet in a narrow dry wash at the foot of a mountain. When finally drilled to 525 feet and set with six-inch casing, it proved to be a flowing well producing 1400 gpm of excellent water for a stock farm.

These are only two of the many experiences the busy Colorado driller and contractor has had in his 40 years in the business. When prodded for additional examples he replied,

"My unusual jobs are like the weather. That is, I have so many more than the usual kind."

Inexperienced, Drills First Well

One experience Ervin considers especially interesting was the first well of his drilling career. It was January of 1906 and the place was near Lawton, Oklahoma, where he and his boss rolled a Kelly-Tanneyhill cam-and-treadle rig to the property of a farmer Cline.

Neither Ervin nor Hagen, his boss, had ever seen a drill in action, let alone operate one themselves, but they set the machine in operation and counteracted nervousness with faith in their mechanical knowledge. They received valuable help from their first, and finest, instructors: Trial and Error.

Powered with two horses traveling in a circle, the old rig proved far too slow and unsatisfactory for the newcomers in the business. Muddy ground and uneven horse footing made it more difficult to hold steady power, a requisite they learned was absolutely necessary for good drilling; yet, after five days, their six-inch hole was down forty feet.

Installs Two-h.p. Engine

Discussing their slow progress, Ervin and Hagen learned that farmer Cline had a single cylinder, two h.p. Fairbanks-Morse gasoline engine, the first motor to appear in the territory. Grasping an opportunity to try something new, a deal was quickly made with the farmer to install the motor on the rig.

The engine proved an excellent work horse! Elated over their mechanical triumph, Ervin and Hagen soon successfully completed their first water well contract. Thus, looking back to his entry in the business, T. D. still believes that the putt-putting of a 1906 single cylinder gas-

T. D. Ervin backed his truck 500 feet in this narrow wash for his best producing well. Drilled in 1938 to 525 feet, the six-inch hole supplies 1400 gpm. Equipment still lies around after Ervin hastily withdrew his rig from the flowing water.

oline engine in itself was unusual, but particularly so when installed on a water well drill rig.*

After serving as a helper, Ervin leased the rig and moved it into northwestern Oklahoma where, in Beaver County, he settled on a homesteader's site. Drilling here apparently was very profitable for Ervin saved enough to buy the machine outright. Then, along with another rig obtained in 1913, he extended his well-drilling operations south to the Pan Handle in Texas and east into Kansas.

He sold out in 1916 to move north to the city of Craig, Colorado, but

*Mr. Ervin would like to learn through THE DRILLER whether any reader used gasoline power for drilling prior to January, 1906.

the itch to drill soon came back and influenced him to design and build his own rig which he kept going until 1936 when it was replaced with a new Bucyrus - Armstrong 33 - W mounted on a 1½-ton Ford V8 truck.

Today T. D. Ervin operates from Glenwood Springs. With this center as a hub, his extensive activities take him from the Continental Divide west into Utah, north into Wyoming, and south to the Colorado border.

Puts 500 Holes Through Boulders

Many geological formations offer interesting drilling in the beautiful mountainous regions of Colorado. In the higher parts of the country granite, quartzite, lime, and conglomerate are encountered while the valleys are filled with boulders composed of the same materials.

The boulders make Colorado drilling very interesting, and sometimes almost too tough, to drill through. "Needless to say, they are all but impossible to penetrate, especially if the strata depth is 60 to 100 feet or more," avers Ervin. "Yet, in 28 years in this territory, I have put down no less than 500 holes through this material! Only the best equipment and previous experience can succeed through most of them," he vouches.

Of the 500 holes, continued Ervin, 150 were water wells and 350 test holes for his state. Many of the holes averaged only 35 feet in depth, but the greater number ran 80 to 100 feet down.

Prior to 1940, half of Ervin's jobs were for farmers and ranchers, about 35 per cent for the Colorado State Highway Department, and the balance for industry, including test holes for both oil and coal prospectors.

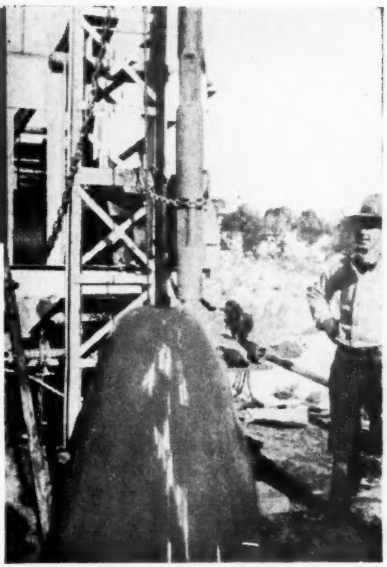
Farm and Ranch Wells Help War

Ervin now concentrates on farm and ranch wells exclusively with several times more work offered him than he can handle. He uses his 33-W to drill both six- and eight-inch holes, casing them with five- and six-inch casings respectively, but getting large yearly footage is hampered by the manpower shortage. His sons, who are excellent well-drillers in their own rights, are in service, so T. D. is forced to carry on alone. In spite of this he was proud to admit that he just completed an eight-inch well 600 feet down in 168 hour's drilling time with no help except to run the casing. Besides drilling, he hauled six loads of water for the job.

Most Colorado water wells produce a good quality of water, but they will vary slightly in different

• On the porch of their house trailer in January, 1938, are Mrs. and Mr. Ervin. The 9½-foot wide trailer later was discarded for an 8 x 20 one to

• The shallowest well Ervin drilled is this one for rancher Guy Ramsey near Craig, Colorado, in 1939. Only 63 feet deep with six-inch casing, it runs 250 gpm for 30 minutes then drops to 30 gpm. After being shut off for two hours it flows at 250 gpm again as Ramsey is watching in this photo. Ramsey had Ervin drill four other wells on the ranch.



localities and even in the same locality. The majority, says Ervin, come in almost exclusively in sandstone in four artesian belts varying in depths from 63 to 955 feet.

Recently, Ervin's 33-W drilled a 955-ft. hole in Colorado and followed it shortly after with a 935-ft. hole in Utah, both for water, without reaching the full machine capacity.

House Trailer Reaches Jobs

Getting to ranch jobs in forlorn places is no problem to this 66-year-old driller for he travels to them with his specially constructed house trailer hooked behind his truck-mounted 33-W. This mode of living is almost a necessity in his territory, says T. D., but the modern conveniences including radio help him enjoy every moment of it. He often cooks his own meals and considers his work an all-year-round vacation trip.

Unusual Fishing Job

Ervin admits difficult Colorado drilling has resulted in many fishing jobs but states many could have been avoided had he or his help taken greater precautions. Usually his fishing problems are due to accidents such as broken cable, broken jars, etc., but he prides his ability to make fishing tools right on the job. Occasionally he will have a machine shop make the tools, but in all instances his fishing has proved successful—except once.

That exception occurred in December, 1924, when a contract he took bound him to put in a 500-ft. six-inch hole by January 1, 1925, to validate an oil company lease. Cased only to 100 feet, the hole caved seriously below 400 feet and T. D. asked for additional casing. Refused, he kept the hole open to 503 feet at which point the superintendent was to check the measurement, but a sudden gravel cave-in caught the tools. After fishing futilely for ten days, the company stated it would pay $1750 for the tools and the drilling if Ervin got all the cable from the hole. As no swivel socket was on the drills, Ervin found it comparatively easy to whip the line to break it free. The tools were lost, but the lease was validated and Ervin was fully reimbursed for his lost string.

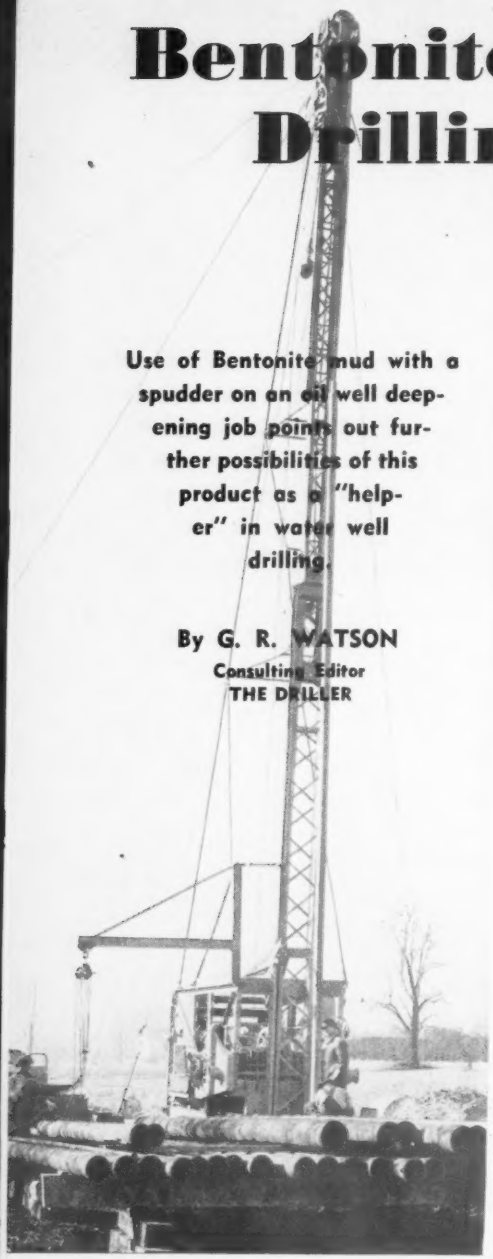
When Ervin accidentally dropped a ¾-inch steel nut into a four-inch hole it resulted in perhaps his toughest fishing job. The hole already had been cased three inches to four

(Continued on Page 16)

Bentonite Steps Up Drilling Rate

Use of Bentonite mud with a spudder on an oil well deepening job points out further possibilities of this product as a "helper" in water well drilling.

By G. R. WATSON
Consulting Editor
THE DRILLER



ANOTHER case which seems to indicate that worthwhile benefits could be realized from the use of Aquagel by water well drillers was observed by the writer on a recent trip through the oil fields of Illinois.

The particular job which brought out this indication was one on which a Bucyrus-Erie 36-L Spudder was deepening an oil well from 3400 feet to 4600 feet. The well had been producing for some time from the shallower level but production had dropped to the point where drilling to the deeper level was necessary.

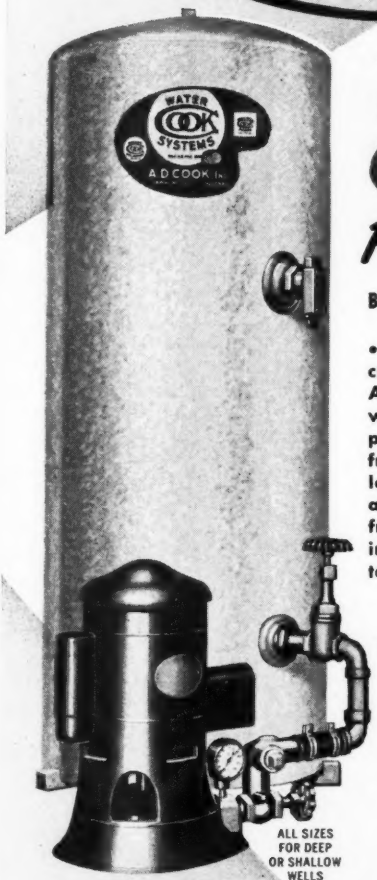
At the 4600-foot level the 36-L was making hole at the rate of better than 100 feet in 24 hours. The tool string consisted of swivel socket, 5½-inch by 8-inch drilling jars, 4½-inch by 40-foot drill stem, and 6⅝-inch, 350-pound drill bit. The tools were working under an 84-foot standard derrick with the 36-L anchored to the derrick leg foundation.

Makes 12-foot Runs

Drilling in limestone, the tools were running 28 strokes per minute and the writer was surprised to observe the operator making a 12-foot run without bailing the hole. When questioned on this point, the driller explained that Aquagel was being used to load the water channels of the bit with a sticky mixture each time the tools were run in the hole. The driller also explained that the amount of water added to the hole for drilling was carefully controlled to maintain a constant consistency which floated coarse cuttings away

(Continued on Page 19)

COOK



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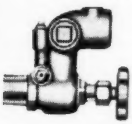

Automatically maintains proper amount of air within tank. Manual Control Valve permits passage of water through Venturi tube creating a vacuum which pulls air through snifter valve. The air-charged water passes directly into storage tank and is not recirculated.

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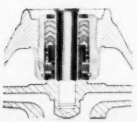

This exclusive Cook unit effectively stops leakage, scoring and binding common to ordinary glands. Adjusts itself automatically. Reduces friction—saves power. Renewable bushing protects shaft.

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Good Wells Assure Post-Victory Jobs

WITH war years creating a lush market for water well drillers everywhere, many still in the business perhaps are taking only the easier jobs that can be completed quickly at ceiling prices.

Although such a policy may result in pleasant, immediate prosperity it may be disasterous not only to the national economy but also to the driller.

The purpose here is to emphasize quality rather than price because the quality of a water well always is synonymous with its price. To most people, however, a well is only a hole in the ground producing a supply of clear water. Few realize the skill needed to drill correctly, seal tightly, and sterilize a well properly. Foremost in the customer's mind remains price, even though today he is willing to pay to get the well — any well.

Quality Over Price

The thoughtful contractor, on the other hand, sees a red flag waving when jobs are accepted at top prices and finished with under-par quality. He isn't worried about the wells producing for the time, but he does see danger in the post-war era when competition increases and prices again will be foremost in the prospect's mind.

Maintaining quality today and telling the customers why they have good wells is important in getting good prices tomorrow. These are the customers who will recommend prospects — in that mysterious post-war future — first to that driller with a reputation for only quality wells at fair prices.

Perhaps today's dollar in the hand is worth much more than several dollars flying in tomorrow's wind, yet water well contractors planning to be in business in the years to come can pull in those flying dollars with good reputations for quality work they perform today.

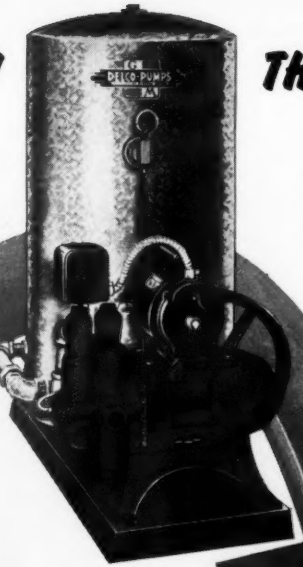
Readers Respond To Photo Request

MANY readers of this journal have responded to our March editorial requesting photographs of rigs on drilling jobs. They apparently concur that lending a snapshot or two for reproduction — along with pertinent data they mail in — makes interesting reading to others and helps the industry as a whole.

More important, these readers

(Continued on Page 19)

PULL IN THOSE PLUS SALES!



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NEWS OF THE MONTH

Pre-selling Water Aim of New Book

STATEMENTS by representative farmers, who tell how their water systems help them increase farm production, are contained in the new booklet "Here's Proof of What an Electric Water System Will Do For You," issued by the Electric Water Systems Council.

With both an immediate and a long-range objective, the aim of the book is to help step up food production immediately and to keep the many advantages of a mechanized water supply before prospective buyers in the postwar period. With wide distribution, the council believes the book will aid the water industry in pre-selling 500,000 electric pumps and water systems to a post-war market.

Other booklets in the promotional series include emphasis on repair and maintenance and the importance of running water in the nation's food production program. Copies of all booklets are available from water pump manufacturers and electric power companies.

Former Driller Leads India-Burma Pipeline Activity

NEWS regarding the construction of the India-Burma petroleum pipe line reveals that a prominent role was played by a former water-well, and later oil-well, drilling contractor, Capt. Louis W. Gwin of Salem, Illinois.

Upon completion of training at the pipeline school, Camp Claiborne, Louisiana, Capt. Gwin commanded an Engineer Petroleum Distribution Company in the India-Burma theater. He and his men had as their first assignment the distinc-

• Captain Louis W. Gwin.

tive job of installing the gasoline distribution system at 20th Bomber Command for the first superfort raid on Japan. The company has since played virtual "leap frog" with two or three other companies across India and Burma, constructing a section of the now-famous pipe line, then hopping ahead of other companies which later passed them in turn.

Captain Gwin's civilian preparation for his wartime job included a background of both drilling and production. He began as a water well contractor in southeastern Missouri, later moving into Illinois when oil field activity there showed signs of a boom. He formed a drilling contracting partnership with C. W. Schneider, adopting the firm name of Schneider and Gwin. With head-

(Continued on Page 20)

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FROM THE MAILBAG

This page is devoted to questions and answers on drilling, driving pipe, dressing bits, etc. All letters will be answered promptly by experienced drillers and engineers who are qualified to give intelligent advice on these subjects. We will publish as many letters of general interest as space

Well Pumps Muddy Water at 139 feet

Dear Sirs:

We recently drilled a 5⅝" hole to a depth of 142 feet. It was limestone all the way down to 139 feet. Although there were 2 or 3 small seeps of water on the way down, we finally obtained a very good stream at 139 feet, but it seems to carry mud with it. An electric pump with 130 feet of pipe was installed, but after pumping 40 or 50 gallons, the water muddies and stays muddy, even when pumped for a day or two. We tried bailing, but with no success. The water stands up in the hole about 100 feet.

Would we get more clear water by raising the pump pipe? Is there any other way to help other than casing it off to the bottom and drilling more hole, hoping to get more water?

L. D. C. Virginia.

Answered by
Art Bruinekool,
Pella, Iowa.

The way I understand it, this contractor gets his water mostly out of the lime from 139' level, except a few seeps farther up. So it must be that he has a mud seam at 139' which washes out when the well is pumped. If this is the case, the best thing to do is to swab or surge to wash this mud out. If it can't be cleaned this way, he will have to case out and go to a greater depth. I do not know much about formations in Virginia but it seems there should be water farther down.

There would be no advantage, in my opinion, in raising the pump pipe to a higher level as undoubtedly after the clear water at top is pumped out, the water would get muddy the same as at present where the pump is farther down. It looks like the only solution is to case off the mud seam and go deeper.

Starting Straight Hole in Limerock

Dear Sirs:

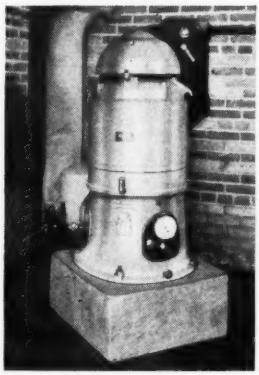
In this section of Virginia it is pretty hard to start a straight hole because of the sloping limerock. We have tried cementing the hole, using scrap iron, and running a reamer hoping to help chip the rock to a level position. This is not very successful and most of our holes are slanting.

L. D. C. Virginia.

Answered by
Art Bruinekool,
Pella, Iowa.

In regard to having trouble in starting a straight hole in the lime, the best way I know to prevent the tools from deflecting would be to shape the drill bits like a line reamer or if this happens just at starting the hole, he might put in a small shot of dynamite after drilling into the lime 6" to 8". The tools should be run with a tight line. There isn't any reason why a hole can't be started straight if the right type of bit is run and the driller uses precaution.

Deming Deep Well Turbine Pumps Supply Water for "Weather Control"



One of the nine Deming Deep Well Turbine Pumps installed in the completely enclosed air conditioned plant illustrated.

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THE COMPLETE LINE

PUMPS AND WATER SYSTEMS

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Ingenuity . . .

(Continued from Page 7)

inches, and the tools were 40 feet below casing, 450 feet from surface when the accident occurred. With only ⅜-inch clearance around the joints, the tools were locked solidly.

T. D. tackled the job of loosening the tools with a bumper but gave up after two days. Then, since no jars were on the tools, he decided a spudding tool would force the nut free—if he had a spud.

A three-day round trip to Craig netted a sheet steel spud ⅝-inch thick, 2¼ inches wide and approximately 18 inches longer than the string. He welded a half round tempered-steel shoe to the bottom of the spud.

Returning to the job, Ervin babbitted a wire line to an open end socket. A one-inch pin of the socket's clevis end was passed through the spud head and held in place with a ¼-inch flat head rivet.

Almost immediately after working the spud in the hole, Ervin experienced another bad break when the rivet head broke, releasing the pin and freeing the spud from the clevis.

Now, in addition to the drill tools, the Colorado driller had a spudding tool to remove—which would have been simple had the pin remained in the spud head. Instead, it came out along with the clevis.

Asserting his ingenuity, Ervin fashioned a latch jack from a mowing machine cutter bar and fished almost three days with it, finally hooking the spud and pulling it from the hole. Once out, the spud and clevis were assembled again, but this time T. D. heated and flattened the pin end rather than locking it with a rivet. Only 30 minutes later the nut was loose, the drill tools re-

How to butter your own bread

Because the JENSEN Pumping Unit makes water from any good well cheap and dependable, many drillers never fail to recommend it. After 25 years JENSEN Pumping equipment is known from coast to coast and in many foreign countries. For wells 100 feet and deeper it has no equal. May we send you Bulletin No. 26?

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leased, and drilling continued. He finished the hole at 500 feet.

Although Colorado drilling can be tough—very tough—Ervin states he always conducts his business on the principle that even "the best way to do the job is none too good." Before a prospect becomes a customer, every detail is carefully explained so that each party fully understands the final agreement. Of course, price is based on formation, diameter, and depth of hole, but Ervin tries "to do just a little better by the customer than agreed without cutting price."

Customers Like Log Service

Perhaps the one reason why T. D. Ervin has so many satisfied customers stems from this policy of treating customers right for they, in turn, seem to want to treat him right. In 40 years of well drilling, T. D. claims he has lost less than $1,000 in non-payment of accounts. "I have found that 99 per cent of my customers are honest and that almost one-fourth of my contracts are repeats."

Another wise practice Ervin has followed for the past 15 years is the duplicate preparation of a complete well record or log. One copy is offered the customer, the other retained for his files. This log shows the name, date, place, formations, water strata, size and kind of casing, size and kind of drop pipe (if any), static level, gpm, etc. Customers like this unspecified service and he has found it valuable to refer to whenever called in to repair a well he had drilled.

Putting in water wells for stock farms and ranches with his 33-W will keep veteran contractor Ervin busy until early winter. He knows he is getting water to help the war effort—and working to make beautiful Colorado a more pleasant postwar state.

FASTER DRILLING WITH...

For profitable shallow well drilling, "Hi-Lastic" keeps the bit turning better on all types of formation . . . helps reduce tendency for the hole to get out of round, and for the bit to channel. You can carry tools higher with "Hi-Lastic," and make a longer stroke, drill more holes faster. Internal lubrication protects "Hi-Lastic" from wear and weather. No manilla cracker needed.

For deep wells, Macwhyte Standard Cable-Tool Line is specially designed and has the proper elasticity for deep well drilling.

For sand lines, Macwhyte coarse laid (6x7) or Macwhyte soft laid (6x19), Mild Plow Steel. No. 827

ARMY E NAVY

Get the CORRECT line for your equipment from

MACWHYTE COMPANY

2939 Fourteenth Avenue, Kenosha, Wisconsin, or any authorized Macwhyte Distributor or Mill Depot

WIT BITS

Catch: "Didn't I hear your new baby bawling last night?"

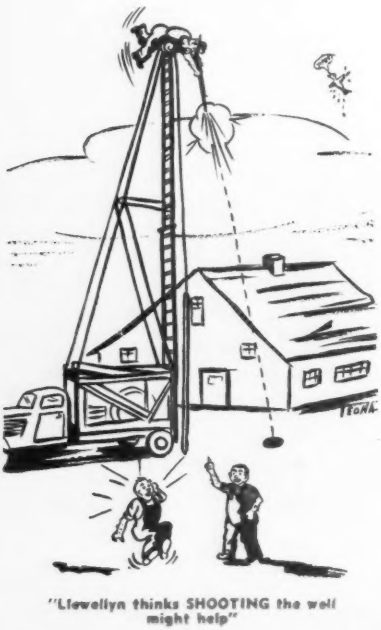
Pitch: "Yah! and on the 4th bawl I walked him."

1. Man is born.
2. Man grows up.
3. Man kicks the bucket.
4. Man is buried.
5. Man turns to dust.
6. Grass grows from dust.
7. Mule eats grass.

Moral—Never kick a mule; you might injure a former relative.

"What was one of the greatest obstacles in drilling the deepest well?"

"Dirt."



"Llewellyn thinks SHOOTING the well might help"

The young negro draftee was the victim of so many practical jokes that he doubted all men. One night, while on guard, the figure of one of the officers loomed up in the darkness.

"Who goes dere?" he challenged.

"Major Moses," replied the officer.

The young negro scented a joke.

"Glad to meet yuh, Moses," he said cheerfully. "Advance and give de Ten Commandments."

"This coffee tastes like mud."

"Well, it was ground this morning."

A foreman, watching a ship carpenter working on the side of a boat, noticed that the workman would drive a nail into the side of the boat, then another, and then he threw one over his shoulder. When this continued, he called out to the workman, "Hey, you, why are you throwing those nails away?"

Back came the prompt answer, "Why they have the heads on the wrong end," to which the foreman replied, "You fool, save all that kind. We use those on the other side of the boat."

A farmer and a professor on a train started a conversation and they soon became a friendly pair.

"Let's have a game of riddles to pass the time," said the professor. "If I have a riddle you can't guess, you give me one dollar or vice versa."

"All right," replied the farmer, "but as you are better educated than I am, do you mind if I give only 50 cents?"

"O.K.," replied the professor. "You go first."

"Well, what animal has three legs walking and two legs flying?"

"I don't know. Here's a dollar. What's the answer?"

"I don't know either. Here's your fifty cents," answered the farmer.

Bentonite . . .

(Continued from Page 8)

from the bottom of the hole and permitted long runs to be made between bailing periods.

Stuck-tool Danger Lessened

A further benefit claimed for the Aquagel was lubrication of the drilling tools and suspension of cuttings in the hole. This minimized the danger of tools becoming stuck with excessive cuttings settling around the drill bit where tools were stopped on the bottom because of some minor delay or stoppage of the engine.

This experience would seem to indicate that similar results could be obtained by using Aquagel on water well drilling with limestone since the results described above were achieved with a cable tool machine.

Photos . . .

(Continued from Page 10)

realize that for each photograph shared they will finally see many other pictures sent in by other readers. To them percentage of return is far in their favor.

Pictures showing rigs on the job and the accompanying operating data sent in by several contractors have proved so interesting that we plan to publish them as short features. Other photographs — some borrowed from albums, some carried in wallets, a few recent snapshots— pictured many phases of water well drilling activities. These will be reproduced along with their data in coming issues.

Meanwhile, may we suggest that you continue to co-operate by mailing in your snapshots for our consideration. We feel that the resulting publicity value should prove very favorable to you.

GIVES WINGS TO RUNNING WATER
SKY POWER
WATER SYSTEM
CASE IS PUNCTURE PROOF AGAINST .22 RIFLES
AVAILABLE WITH AUXILIARY PUMPJACK AND GAS ENGINE
Here's a wholly new conception of windmill power —a full-fledged running water system fully as modern as an electric system.
You can sell a Sky Power Windmill now as the first step in this system. Automatic controls, gauges and pneumatic tank can be attached when they are available.
This system fulfills the farmer's dream of more comfortable, more profitable farm living. It is made to order for the 3 million farms without electricity.
Monitor
STORM•SAFE
WINDMILL WATER SYSTEM
THE Monitor LINE
DEEP WELL WATER SYSTEMS • WINDMILLS • HAND PUMPS • PUMP JACKS • ENGINES • WATER WELL SUPPLIES
WITH THE 3 VITAL STORM-SAFETY FEATURES
✓ New Pull-IN Control of No. 4000-W Windmill prevents mill from flying into gear, relieves storm-strain on cable control.
✓ Storm-Safe V-Brake locks wheel, anchors it safely in high winds.
✓ Wind-Governing gives constant pump speed in variable winds; prevents racing out of control.
BAKER MANUFACTURING CO., EVANSVILLE, WIS.

BRANCHES:

BAKER MFG. Co.: Minneapolis, Minn.; Madison, Wis.; Fort Dodge, Ia.; Cedar Rapids, Ia.; Omaha, Neb.; Kansas City, Mo.; Enid, Okla.; Hutchinson, Kansas.
BAKER MFG. LTD., Winnipeg, Canada.
AXTELL CO.: Fort Worth, Tex.; Amarillo, Tex.; Lubbock, Tex.; San Angelo, Tex.

Driller Suggests Successful Bit Tempering Method

BECAUSE he has been reading in THE DRILLER that tempering bits still causes trouble with many contractors, G. B. Holbert of Crossville, Tennessee suggests a method which he claims has never failed him no matter how hard the rock gets. "And we have plenty tough drilling in this part of the state," says Holbert. "The rock is hard and gritty and one hour is a good run for a bit."

Uses Water and Oil

Two temper boxes or baths are needed, one containing water and the other oil. Drain oil may be used as long as no water is present in it.

After the bit is heated, Holbert lowers it into the water bath. Only the tip to the corner is immersed and remains in the water for about one minute after which it is placed into the oil bath to cool down. And that is all there is to this Tennessee driller's method.

G. B. says that occasionally the bit is still too hot from the water bath and sets the oil afire. He likes to keep it in the water until it is almost black, but if the bit should burn the oil "just take it out for a second or two or put it back in the water for a little more cooling."

Never Overheats Steel

Holbert states bits never need be red hot and he never reheats them for tempering. "I believe it's better for steel not to get too hot for tempering."

With 35 years of drilling behind him, Holbert is proud to say, "I never lost a string of tools but what I got out, although two of my bits were lost in limestone under plenty of caving and boulders." Perhaps sharp bits and his tempering method have helped him cut down the possibility of tools stuck in the hole.

There'll be a
BIG DEMAND
for these
"PUMPS by Aurora"
AURORA DEEP WELL TURBINES
are available in sizes of 4" to 24" for every pumping condition—oil or water lubricated. Streamline designed for highest efficiency and longest life.
for DEEP WELLS
APCO Master-Line WATER SUPPLY SYSTEMS
Here is the "Best Buy" in water systems for farm and home. Turbine-Type, Simple, Compact, Silent. Life-Time service of generous, low cost water supply. Fully Guaranteed.
for SHALLOW WELLS
We also make all Kinds of Centrifugal Pumps and Jet Pumps.
Write for Descriptions.
AURORA Always PUMPS
AURORA PUMP COMPANY
58 Loucks St., Aurora, Illinois

News . . .

(Continued from Page 12)

quarters at Salem, the firm operated a number of mobile cable tool spudders — at one time having twelve strings of tools running in the Salem and St. Elmo fields on major oil company work.

After Capt. Gwin enlisted in 1942, but before leaving the States, the partnership was dissolved, Schneider continuing to contract and Gwin retaining some of the oil producing properties the firm had developed in Kentucky and Indiana. Capt. Gwin plans to resume contracting after the war.

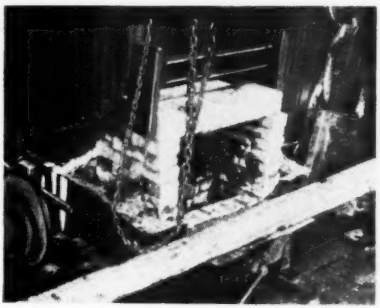
Produces 700 gpm From Shallow Well

• Mike Slingerland, Owosso Water Commissioner Walter Bennett, and Jim Slingerland at 700 gpm well.

WHEN Mike Slingerland and son, Jim, got down to 47 feet on an eight-inch well being drilled in Owosso, Michigan, they had the hunch that the well would be an excellent producer but had no equipment on hand to test it.

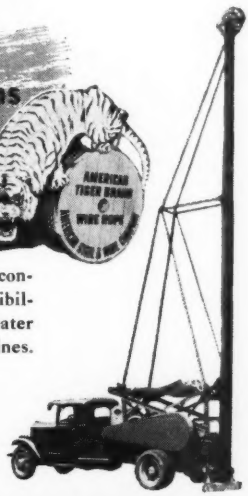
Calling upon the Deming Company of Salem, Ohio for rush assistance, Slingerland was lucky enough to obtain a centrifugal pump which tested the well at 700 gpm to prove his guess as correct.

The pump now is being used by the Owosso water works to augment other supplies for the city.



• This special bit dressing furnace was built on the job in the doghouse where a drill was putting in a 12-inch, 1800 foot well for the Town of Lake, Wis.

"MOR-SPRING" means more footage per day



American TIGER BRAND "Mor-Spring" Wire Lines make drilling faster and easier. Their 6-strand, 19-wire construction offers maximum strength, toughness and flexibility. Advantages that pay off in more hole and greater profit. Ask your distributor for these superior drilling lines.

USS STEEL
UNITED STATES STEEL

AMERICAN STEEL & WIRE COMPANY
Cleveland, Chicago and New York
COLUMBIA STEEL COMPANY, *San Francisco*
United States Steel Export Company, New York
UNITED STATES STEEL

U·S·S American TIGER BRAND MOR-SPRING WIRE LINE

BARGAIN COUNTER

To the reader who wishes to advertise used equipment in "Bargain Counter" Section. All advertising in this section is payable in advance. Enclose your check with copy. Rate: 50c per line. Minimum charge $1.20. No discounts; no commissions. Read these instructions carefully. The average line contains 28 characters (20 characters if all capital letters are used). Count spaces and punctuation as one character each. Allow 10 characters for box number if blind advertisement is desired. Count your own copy to save delay. Holding up your advertisement one month to secure approval of revised copy or an additional remittance, may cost you real money in a lost sale. Be sure to enclose the correct amount of money with your order. Closing date—10th of preceding month. Example—January issue closes December 10th.

To the reader wishing to answer "Bargain Counter" Section advertisements appearing on these pages: Be sure to address your inquiry to the advertiser by using the correct box number. Mail your letter in care of THE DRILLER, South Milwaukee, Wisconsin. Write each advertiser a separate letter. Do not write us for name and address of advertiser. This information will not be given out. We have no information about the equipment advertised other than that shown in the advertisements themselves.

DRILLS

No. 240 manila or wire line Speed Star mounted on 1½ ton '36 Chevrolet. Complete with 5⅝" tools and 200' of new manila cable. A-1 condition. Located in Western Penna. Box 0447

FOR SALE

1 — 22 - W Bucyrus - Erie drilling machine, truck mounted. Complete with tools and cables. Machine and truck practically new. Write to A. A. Vaughan, Missouri Valley, Iowa.

FOR SALE

Loomis Clipper Spudder, steel frame, Continental motor, battery ignition and cushion, mast, mounted on 33 Chev. truck, tires fair, price $1,000. Machine in good running order. Henry Schuster, Golden, Ill.

WANTED

Bucyrus-Erie 22-W well drill without tools. Must be in good condition. Please advise location, condition and price. Haupt Well Co., Auburndale, Wis. Phone 4304.

Used well machine in good condition. Bucyrus-Erie 21-W, 33-W, or Armstrong 35. Please include information on price, equipment included, location of machine. Box 0432

One or two all steel drills, with or without tools. Give condition, age, size, lowest cash price. F. N. Hagmann, Jr., Vienna, Virginia.

HELP WANTED

Water well drill salesman. In addition to sales ability must have substantial background of practical operating experience and be willing to travel anywhere.

Box 0437

MISC.

New dart valve bailer 10" x 10 ft., 3/16" stock, also good Saunders 4-12" pipe threading machine. Cost $150. Sell $120. Stewart Bros., Schenectady 2, N. Y.

Third "E" Award Won By Aurora

FOR meritorious service on the production front, Aurora Pump Company of Aurora, Illinois received formal recognition of its second renewal of the Army-Navy "E" Award at recent flag-raising ceremonies.

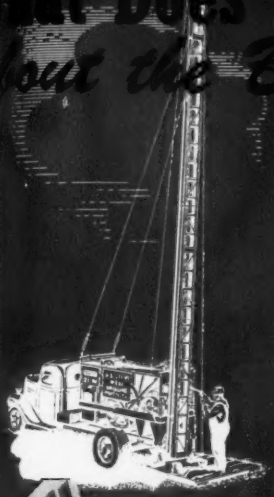
The achievement was announced with emphasis placed upon the loyal accomplishments of the plant personnel.

Macwhyte Advances Western Managers

ADVANCED to district sales managers, the appointments of Fred M. Sime to the Pacific Southwest and Wm. J. Brett to the Pacific Northwest were announced by Macwhyte Company of Kenosha, Wisconsin.

Both appointees are well known as wire rope specialists, having traveled their territories for many years. Mr. Sime will be located in San Francisco and Mr. Brett in Portltnd.

What Does This Picture Tell You About the Bucyrus-Erie 21-W?



Just examine the picture below, showing the frame and machinery of the 21-W, and you'll see that . . .

1. . . . the 21-W, like all Bucyrus-Eries, has an all-steel, electric welded box frame that keeps engine, reels, shafts, and gears in smooth-working alignment.

2. . . . plenty of strength is provided where strength is needed, yet there is no excess weight.

3. . . . the accurately-machined, close-fitting parts are compactly arranged without sacrificing accessibility for maintenance or repair.

4. . . . the 21-W has the same direct-drive drilling motion that has helped make Bucyrus-Eries the hardest hitting drills available anywhere.

5. . . . the 21W has the simplicity characteristic of efficient design. There are no complicated "gadgets" to cause trouble.

6. . . . belt drive, reels, etc., are fully guarded for maximum safety.

4W45C

BUCYRUS ERIE

The points above are a few of the many reasons why drillers everywhere are getting effective long-life performance with their 21-Ws on wells to 500 feet. They are reasons why it will pay you to make your next rig a 21-W.

BUCYRUS-ERIE CO.

GREAT AMERICAN GAME

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A journal for water well drillers

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